

YUMA ROUTINELY TESTS ARMORED VEHICLES AND DIRECT-FIRE MUNITIONS

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When it comes to weapon systems and munitions, the people employed at the U.S. Army Yuma Proving Ground (YPG), AZ, take what they do seriously. In a typical year, they fire nearly 170,000 rounds; fly 4,000 air sorties; conduct 3,600 personnel and cargo parachute drops; and drive upwards of 100,000 miles on tracked and wheeled vehicles over rugged desert test courses. They bang, bump, bruise, and rock their equipment, but the end result is materiel they are proud to hand to American soldiers in the field because they know it's the best and most reliable anywhere.

One of the important test missions at YPG involves testing combat vehicles, from their weapon systems to their tracks. Major systems tested by the proving ground's Combat Systems Division include the M1A2 Abrams Main Battle Tank and the M3A3 Bradley Fighting Vehicle, the true workhorses of the Army's mechanized and tank battalions.

Division personnel also work with the Light Armored Vehicle and a variety of other specialized systems. They routinely fire 105mm and 120mm tank weapons, the 25mm chain gun mounted on the Bradley Fighting Vehicle, and TOW (Tube-launched, Optically-tracked, Wire-guided) missiles. All Army production acceptance testing of tank training ammunition, a form of quality control, is performed at the proving ground. YPG is the only Army proving ground with a Nuclear Regulatory Commission license for firing depleted uranium ammunition

using direct-fire weapons at extended ranges.

Division Chief Bill Rezin says the work that the men and women of his division do is critical to the national defense. "We're responsible for the complete armored weapon system," he says, "so the importance of what we do cannot be minimized. The performance of the vehicles and the effectiveness of their weapon systems in a future conflict is, in large part, based on what we do right here," he adds.

That has been the case in past conflicts, most recently in the Balkans and earlier during the Persian Gulf War. YPG tested much of the tank ammunition used so effectively against Iraqi tanks on the sands of the Middle East. The Abrams tank, the centerpiece of the Army's tank battal-

ions deployed to the Persian Gulf, underwent more than 100,000 miles of grueling desert road testing at the proving ground while under development in the 1970s and 1980s. That was a good thing too because the air filtration systems of engines installed in early tanks performed poorly in the dusty desert environment.

The combat systems firing range, which is partially completed, is in an area of the proving ground that can be used both for developmental or operational testing. The range encompasses 3,460 acres and contains three lines of fire for either stationary firing or firing on the move. There are also two "bump" courses on the range that allow developers to fully exercise the fire control systems of tested vehicles while driving. A separate combat systems maneuver area covers 5,930



An M1A2 Abrams fires a 120mm projectile during an ammunition production acceptance test at the Red Bluff Firing Range at YPG.

acres. Vehicles operate on the maneuver range as they would in combat, even on a cross-country basis.

"One of the features of these ranges is that they enable us to not only test the vehicle but also the interface between the soldier and the system. By doing this on a relatively small scale early in the development cycle, testers are able to involve soldier-users much earlier than previously. This helps us identify weaknesses sooner, which means we can correct problems and improve the system more efficiently and inexpensively," Rezin explains.

Two versions of the much-anticipated Tank Extended Range Munition (TERM) have recently come to YPG for firing on fixed mounts. There are currently two TERM efforts, but only one will be selected for final production and fielding. One is the TERM KE (kinetic energy) built by Alliant Techsystems, and the other is the TERM CE (chemical energy) built by Raytheon. Both have electronic "brilliance" built into them. The TERM competitors came to the proving ground because of the extreme firing ranges offered and the proving ground's ability to reliably recover rounds.

"TERM will offer our tankers a round which not only has the current capability of being able to defeat heavily armored targets in the line-of-sight mode, but will offer a beyond line-of-sight firing capability," says Test Director Terry Miller. "This means less exposure to enemy fire for our soldiers for we'll be able to destroy attacking armor long before they can harm us. TERM will enable us to retain our edge over enemy armored forces in the future," adds Miller.

One of the major intentions of the thinking behind the TERM round is for it to seamlessly integrate into the M1A2 SEP+ (System Enhancement Program) Abrams tank, with electronics encased in the projectile interfacing directly with existing fire control systems via a data link. The round will be transported, handled, loaded,



A photographer prepares a high-speed camera for test photos at YPG's firing range.

and fired like other 120mm rounds. The TERM will contain multiple seekers that allow it to defeat armored targets in all types of weather. For long-range targets, TERM will enable cooperative engagements with a Scout vehicle or through the artillery fire support network.

TERM will dramatically expand the battlespace of the tank battalion commander. TERM rounds will definitely let American armored forces "reach out and touch" their opponents—with lethal results.

Testing advanced weapons such as TERM has recently become commonplace at YPG. From global-positioning receivers used to accurately maneuver descending parachute loads to 155mm artillery projectiles that will seek and destroy enemy targets, the expansive 1,300-square mile proving ground has become a vital component of the U.S. military machine.

A framed color photograph near the main door of the Combat Systems Division office accurately summarizes the feelings of men and women throughout the proving ground. The photo shows soldiers and their equipment crossing a wide river in Bosnia on a barge. Large lettering under the photograph proclaims, "This is our customer."

"What we do is serious business, and we know it. Our mission is simply to do the best humanly possible to provide our soldiers with the finest equipment available to defend themselves and our country. Our job is to put our motto and our beliefs into action each day. And I believe we do," Rezin says.

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